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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/057,619
Filing Date: January 24, 2002
Appellant(s): BAIGES, IVAN J.

Scott Lund (Reg. No. 41,166)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 5, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1-18 and 35-37 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof.

The rejection of claims 19, 21-29 and 38-40 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof.

The rejection of claims 30-34 and 41-43 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof.

The rejection of claim 44 stands by itself.

See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6164747	Yashima et al.	12-2000
5,677,719	Granzow	10-1997

4,940,998	Asakawa	07-1990
5,838,343	Chapin et al.	11-1998

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-6, 8-14, 18, 19, 21-28, 30-33 and 35-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yashima et al. US 6,164,747 in view of Granzow US 5,677,719.

Yashima et al. discloses, regarding claims 1 and 19, a printing system for depositing marking fluid on print media (column 16, lines 42-45) comprising:

a first marking engine/printhead assembly (31A) for depositing a first marking fluid on a first portion of a first side of the print media as shown and described in relation to figure 10;

a second marking engine/printhead assembly (31B) for depositing a second marking fluid on a second portion of a first side of the print media different from the first portion as shown and described in relation to figure 10,

wherein the first marking engine (31A) and the second marking engine (31B) are adapted to move back and forth across the print media along a first direction (direction of guide shafts 32) while depositing the respective first and second marking fluid on the respective first and second portions of the media along the first direction (column 16, lines 42-56).

Regarding claims 2 and 19, the printing system further includes

a first mechanism (32-34) coupled to the first marking engine (31A) for moving the first marking engine (31A) back and forth across the print media so that the first marking engine (31A) can deposit the first marking fluid (ink) on the first portion of the print media as shown and described in relation to figure 10; and

a second mechanism (32-34) coupled to the second marking engine (31B) for moving the second marking engine (31B) back and forth across the print media so that the second marking engine (31B) can deposit the second marking fluid (ink) on the second portion of the print media as shown and described in relation to figure 10.

Regarding claim 3, the mechanisms are spaced apart as indicated in figure 10.

Regarding claim 4, the mechanisms employ identical structure as shown and described in relation to figure 10.

Regarding claim 5, the mechanisms each include:

a linear guide rod (32) for guiding the respective marking engines (31A, 31B);

a drive motor (33); and

a drive element (34) coupled between drive motor (33) and the marking engines (31A, 31B) linearly moving the respective engines along the guide rods (32) back and forth across the media as shown and described in relation to figure 10.

Regarding claims 6 and 33, the print media is shorter in the print scan direction than in the media feed direction.

Regarding the functional language of claims 8 and 21-24, the mechanisms are taught to operate in unison (column 17, lines 10-23).

Regarding the functional language of claims 9 and 25-28, the mechanisms are taught to operate independently (column 17, lines 24-27).

Regarding claim 10, identical marking fluids are taught to be contained in the respective marking engines in the case of monochrome printing (column 16, lines 9-13).

Regarding claim 11, different marking fluids are taught to be contained in the respective marking engines in the case of color printing (column 17, lines 30-34).

Regarding claim 12, identical marking engines (31A, 31B) are disclosed as shown and described in relation to figure 1.

Regarding claim 13, single color (black) printheads are taught for each marking engine (column 16, lines 9-14).

Regarding claim 14, multicolor printheads are taught for each printing engine (column 17, lines 30-34).

Regarding claim 18, thermal ink ejection is utilized (column 10, lines 15-26).

Regarding the arrangements of the first and second mechanisms as specified in claims 35-40, the mechanisms are adapted to function as claimed as shown and described in relation to figure 10.

Yashima et al. discloses, regarding claim 30, a method for performing a printing operation for depositing ink on print media, the method comprising:

providing a first movable printhead assembly (31A) for depositing ink (column 16, lines 42-47);

providing a second movable printhead assembly (31B) for depositing ink (column 16, lines 42-47); and

moving the first and second printhead assemblies back and forth across the print media along the first direction while the first printhead assembly deposits ink on a first portion of a first side of the print media and the second printhead assembly deposits ink on a second portion of the first side of the print media different from the first portion along the first direction (figure 10, column 20, lines 43-52).

Regarding claim 31, Yashima et al. teaches the inclusion of a step of moving the printheads in unison (column 20, lines 43-52).

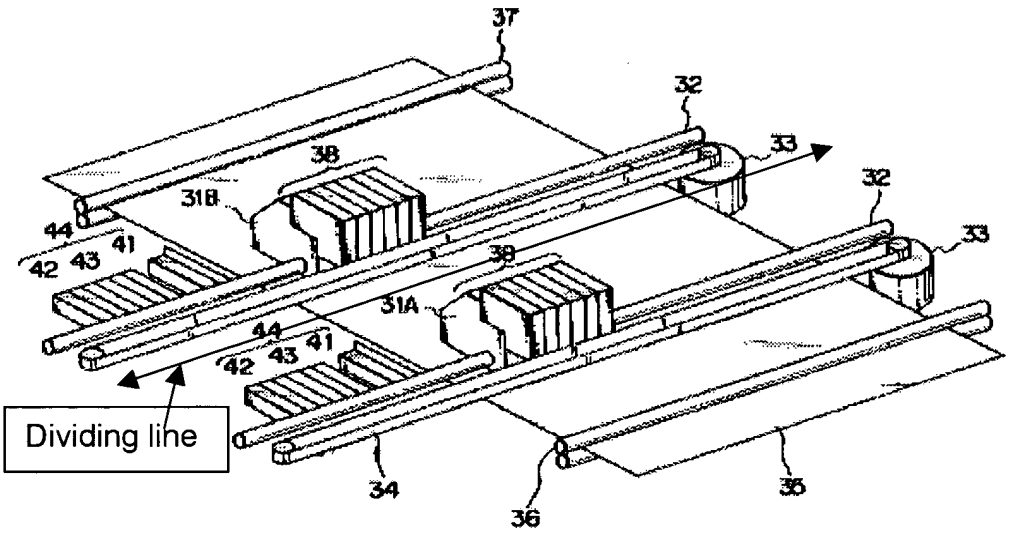
Regarding claim 32, Yashima et al. teaches the inclusion of a step of moving the printheads independently (column 20, lines 33-43).

Regarding claim 41, the printhead assemblies are moved back and forth across the print media in a first direction and the printhead assemblies are spaced apart in a direction perpendicular to the first direction as indicated in figure 10 and column 20, lines 43-52.

Regarding claim 42, moving of the printhead assemblies is performed such that during the steps described in column 20, lines 43-52 printhead assembly 31A deposits ink on one side of a dividing line and printhead assembly 31B deposits ink only on the other side of a dividing line.

Regarding claim 43, moving of the printhead assemblies is performed and the assemblies are spaced apart as shown and described in relation to figure 10.

FIG. 10



Yashima et al. discloses, regarding claim 44, a system for printing on print media (35), the system comprising:

means for moving (31A) across the print media along a first direction and depositing a first marking fluid on a first portion of a first side of the print media along the first direction as shown and described in relation to figure 10;

means for moving (31B) across the print media along the first direction and depositing a first marking fluid on a first portion of a first side of the print media along the first direction as shown and described in relation to figure 10; and

means for moving the print media (1709) in a second direction substantially perpendicular to the first direction (column 17, lines 55-56).

Yashima et al. fails to disclose, regarding claim 1, that the first marking engine is excluded from marking in the second portion and that the second marking engine is excluded from marking on the first portion.

Yashima et al. fails to disclose, regarding claim 19, that the first movable printhead assembly deposits ink only on the first unprinted portion and the second movable printhead assembly deposits ink only on the second unprinted portion.

Yashima et al. fails to disclose, regarding claim 30 and 44, initially positioning the print media so that the first movable printhead assembly/means for moving deposits ink only on the first portion and the second movable printhead assembly/means for moving deposits ink only on the second portion.

Granzow teaches positioning an unprinted print receiving surface so that a first movable printhead assembly (130) and second movable printhead assembly (132) deposit ink only on a first and second portion (upper and lower half of same page) respectively without depositing ink on other portions (figure 7, column 5, lines 12-22).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to position an unprinted print medium in the system and method of Yashima et al. so that the first movable printhead assembly and the second movable printhead assembly deposit ink only on the first and the second portions respectively without depositing ink other on portions as suggested by Granzow.

The motivation for doing so would have been to achieve faster printing speed as taught by column 5,lines 12-22 of Granzow.

2. Claims 7 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yashima et al. US 6,164,747 in view Granzow US 5,677,719, as applied to claims 2 and 30, and further in view of Logan US 4,910,871.

Yashima et al. in view of Granzow renders obvious the claimed invention as recited in claims 2 and 30 as noted in the 35 USC 103 rejection above.

Yashima et al. in view of Granzow fails to disclose that the size of the media is longer along the print scan axis than the media feed axis.

Logan suggests printing on media such as mail envelopes wherein the size of the media is longer along the print scan axis than the media feed axis (figure 2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a print media arranged in a manner as suggested by Logan in the printing system of Yashima et al. in view of Granzow.

The motivation for doing so would have been to achieve printing on different paper sizes and on envelopes.

3. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yashima et al. US 6,164,747 in view Granzow US 5,677,719, as applied to claim 12, and further in view of Asakawa US 4,940,998.

Yashima et al. in view of Granzow renders obvious the claimed invention as recited in claim 12 as noted in the 35 USC 103 rejection above.

Yashima et al. discloses, regarding claims 16 and 17, different single colors in each of the marking engines of multiple colors (column 17, lines 24-34).

Yashima et al. in view of Granzow fails to disclose, regarding claim 15, individual printheads for the different single colors in each of the marking engines of multiple colors.

Asakawa discloses individual printheads for different single colors.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide individual printheads for the different colors of Yashima et al. in view of Granzow as taught by Asakawa.

The motivation for doing so would have been to provide for individual replacement of printheads as suggested by column 2, lines 51-59 of Asakawa.

4. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yashima et al. US 6,164,747 in view Granzow US 5,677,719, as applied to claim 19, and further in view of Chapin et al. US 5,838,343.

Yashima et al. in view of Granzow renders obvious the claimed invention as recited in claim 19 as noted in the 35 USC 103 rejection above.

Yashima et al. in view of Granzow fails to disclose a third carriage mechanism for moving a third printhead assembly in the first direction.

Chapin et al. discloses a multiplicity of carriage mechanism (>2) for transporting printheads over a print medium.

It would have been obvious to a person of ordinary skill in the art to provide additional carriage mechanisms parallel to the first and second carriage mechanisms of Yashma et al. as taught by Chapin et al.

The motivation for doing so would have been to provide redundancy in case of a faulty carriage printhead as suggested by Chapin et al.

(11) Response to Argument

The appellant has argued that the prima facie case of obviousness put forward by the examiner in rejecting the claims is flawed because the proposed combination would render the primary reference (Yashima et al. '747) unsatisfactory for its intended use. The appellant suggests that it is a necessary condition that both of the marking engines (31A, 31B) of Yashima et al. be used to print on common areas.

The examiner disagrees. Yashima et al. teaches many different embodiments and configurations and the characteristic feature of these embodiments is that different ink types are combined in printing to enable printing of grayscale tones. However these different ink types are not necessarily printed from the different marking engines (31A,

31B) but may be produced from a single marking engine containing each of the different types of ink (two different marking engines are not even necessary to produce the desired effect as indicated by the embodiment of figure 20 of Yashima et al. which discloses that the effect is produced with a single marking engine). Regarding the embodiment as shown in figure 10 each of the marking engines (31A, 31B) contains all of the number of inks necessary to combine the inks and produce the desired plural tones as taught in column 16, lines 45-47 of Yashima et al. While the examiner acknowledges that the marking engines (31A, 31B) are used in combination to perform printing in some embodiments of Yashima et al. this is not seen to be a limiting feature of the reference since the reference discloses embodiments such as that shown in figure 20 wherein the different inks used to form the grayscale tones are provided by a single marking engine.

Furthermore it is noted that claims 1, 19 and 44, and the claims dependent therefrom, are each directed to an apparatus and the differences that the appellant is relying on to establish patentability lie in the intended use statements of the apparatus (Either one of Yashima et al. or Granzow discloses plural marking engines configured for depositing marking fluid and moving across print media). While the functional limitation were considered during examination numerous case law citations as noted in MPEP 2114 refer to the necessity of apparatus claims being structurally rather than functionally distinguished from the prior art (i.e. citing a new use of a prior art apparatus does not result in patentability of an apparatus claim).

Regarding method claim 30, and the claims dependent therefrom, the use of plural movable printheads each exclusively depositing ink on respective portions of the print media is rendered obvious by Granzow to increase print speed (figure 7, column 5, lines 12-22) as explained in the applied rejection.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Blaise Mouttet

October 22, 2004

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